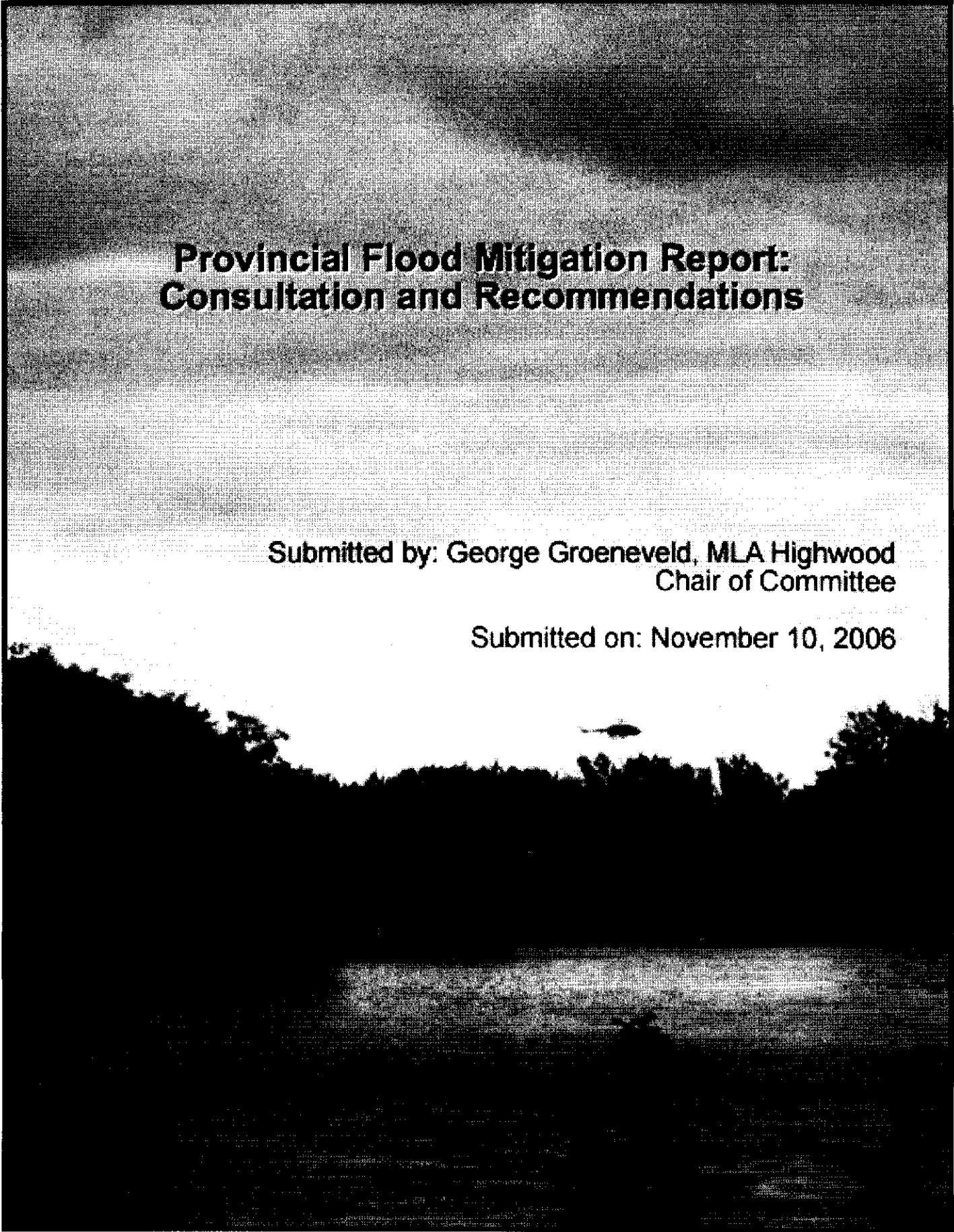




Provincial Flood Mitigation Report: Consultation and Recommendations

**Submitted by: George Groeneveld, MLA Highwood
Chair of Committee**

Submitted on: November 10, 2006

Executive Summary

Extreme flood events in Alberta can result in loss of life and cause substantial property damage. In June of 2005, river flooding tragically resulted in the loss of three lives, over \$165 million dollars in disaster service payments and many unaccounted hardships for Albertans.

In an effort to identify potential mitigative measures to this natural disaster, a ministerial task force was struck in the fall, 2005 and a flood mitigation committee was created. Lead by G. Groeneveld, MLA for Highwood, the committee consisted of representatives from Alberta Infrastructure and Transportation, Alberta Environment and Alberta Municipal Affairs.

A draft flood mitigation strategy was developed. The key elements of the strategy are: (1) making resources available to make informed decisions about flood risks, (2) providing support to municipalities through guidelines, regulations and programs to limit future developments in flood prone areas and (3) continuing to provide technical expertise to municipalities for river and lake related flooding.

The resources required for implementing the all recommendations are estimated at \$306 million as a onetime investment to be staged over period of years, \$1.2 million increase in government operational budgets and include additional internal resources. We recommend that the federal government be approached to share the \$300 million cost for flood mitigation for existing developments in flood prone lands since the federal government shares the cost of disaster assistance if the mitigation work is not done.

An extensive consultation for 16 of the recommendations was held with municipalities who had previously been identified as potentially at risk from river flooding. The results of the consultation indicated strong support was shown for all of the recommendations in the flood risk strategy. After consultation, two additional recommendations were added to the draft flood mitigation strategy for a total of 18 draft recommendations for flood mitigation

Should the province wish to proceed with a provincial flood risk strategy, a project management team is needed to create an action plan for implementation of the recommendations, including budget submissions, directing legislative reviews and identifying requirements for additional full time positions. A second stage of the flood mitigation strategy may also include consultation with additional stakeholder, include First Nations, and refine the scope of the flood mitigation strategy. Implementation of the recommendations proposed will require development of a strategy and clarification of existing programs and key policies.

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1. Introduction

In Canada, floods are the most destructive natural disaster in terms of cumulative property damages and losses (Kumar et al., 2001). In Alberta, major floods along rivers and streams have resulted in loss of lives and hundreds of millions of dollars in damages. Major recent flood events occurred in 1995, 1997 and 2005. River floods can occur throughout the year with precipitation leading to summer floods (1995 and 2005 floods) and river ice creating a potential for flooding in the winter (1997 floods). River flooding in Southern Alberta during the spring of 2005 tragically resulted in the loss of 3 lives and an economic loss of hundreds of millions of dollars. To date, the federal and provincial governments have provided over \$165 million in disaster assistance for this flood event.

In September 2005, a multi-department Flood Mitigation Committee was struck to develop a Provincial strategy for mitigating damages to communities where the damage occurs due to flooding from a river or stream. This definition excludes water damage from precipitation, municipal infrastructure or groundwater. The Committee Chair is Mr. George Groeneveld, MLA, Highwood and committee members include representatives from Alberta Infrastructure and Transportation (INFTRA), Alberta Environment (AENV) and Alberta Municipal Affairs (MA). INFTRA led the committee from September 2005 until May 2006 when, due to staff retirement, the lead role was given to AENV. Committee membership is detailed in Appendix A. This report documents the progress of the Flood Mitigation Committee and concludes with draft recommendations for the next stage of a provincial flood mitigation strategy.

2. Background

All levels of government have a role to play in a provincial flood mitigation strategy for Alberta. For a large flood event, the federal government pays up to 90% of the disaster assistance funds and, therefore, should have an interest in a strategy to reduce economic losses. The province has responsibility for managing natural resources that includes regulating activities in the waterways, flood risk identification and flood forecasting. As well the province is responsible for a portion of disaster assistance funding. The municipal government is responsible for considering flood protection in land use bylaws and emergency management within their community if a flood event were to occur.

A draft flood mitigation strategy was prepared in 2002 by representatives of several departments including Alberta Environment, Municipal Affairs, Alberta Transportation and Infrastructure, Agriculture, Food and Rural Development, Economic Development, Sustainable Resource Development and Finance. Although the document remained a draft, some of the recommendations from this report were implemented. For example, the Water Strategy at AENV captures the need to provide flood risk information to communities and the INFTRA document "Flood Risk Management Guidelines for Location of New Facilities Funded By Alberta Infrastructure" provides guidelines for the acceptable level of flood risk for critical and lifeline structures.

The Flood Mitigation Committee reviewed the 2002 draft mitigation strategy and found that a substantial volume of material was still relevant to government departments in 2006. Since the draft strategy provided general guidelines for ongoing functions within departments, many of the items are still part of a valid flood mitigation program four years later. For example, Alberta Environment has collected, does collect and will continue to collect flood information during flood events.

Municipal participation is a key element in a flood mitigation strategy. Municipalities are the front line in delivering many important aspects of flood mitigation because they are ultimately responsible for approving development in their communities. In addition, municipal governments often have idea of potential flood mitigation measures that are appropriate for their local areas and the relative costs of such proposals. Shrubsole et al. (2003) state that failure to communicate and equip municipalities with the resources that they need to make responsible decisions has been a major downfall of many flood mitigation programs.

This report documents the efforts of the Flood Mitigation Committee to examine measures to lessen the impacts of river and stream flooding on Alberta communities with an identified risk. It includes the results of an extensive municipal consultation process and concludes with draft recommendations.

3. Activities of the Flood Mitigation Committee

The Flood Mitigation Committee was struck in the fall, 2005. Committee members collected information on previous and ongoing government efforts towards flood mitigation in Alberta. During the winter, information was reviewed and the committee's comments on the 2002 Draft Flood Mitigation were documented.

A consultation process was initiated in March 2006 with municipalities to gauge the level of municipal support for the ideas within the mitigation strategy, to determine the extent of knowledge regarding local flood mitigation needs and the costs associated with flood mitigation for the municipalities. The consultation was limited to areas with an identified flood risk as defined by the provincial flood risk mapping program. Focused on urban communities, flood risk areas identify the areas most likely to benefit from appropriate land use decisions by reducing the potential for flood damage in these flood prone areas. A list of municipalities, scheduled meetings and committee representation at the meetings is listed in Appendix B.

4. Consultation Results and Recommendations

The results of the municipal consultation process showed an overwhelming support for concepts within the draft flood mitigation strategy with a minimum of 79% support and up to 100% for some aspects of the strategy. This section discusses the key concepts in the draft strategy. The complete recommendations, degree of support and potential lead departments are provided in Appendix C. Hart (2006) details the results of the municipal consultations in a report titled "Consultations with Communities at Risk".

After reviewing the responses on the 16 draft recommendations presented, the Flood Mitigation Committee rephrased some of the original recommendations and added two additional recommendations to produce a set of 18 recommendations for a provincial flood mitigation program. The goal of the flood mitigation program is to reduce damages in Alberta in the event of a major river flood. The full recommendations, report of community support and potential methods of implementation are contained in Appendix C. A summary of the recommendations follows.

Target: Alberta has the resources available to make informed decisions about flood risks.

Recommendations:

1. AENV coordinate the completion of flood risk maps for the identified urban flood risk areas in the province.
2. AENV develop a map maintenance program to ensure that the flood risk maps are updated when appropriate.
3. AENV identify priority rural flood risk areas that require flood risk mapping and develop a program to prepare the maps.
4. AENV co-ordinate the determination of the 1:100 year still water lake elevation for all gauged lakes in the province.
5. AENV continue to collect high-water elevation, aerial photography and other appropriate data whenever a significant flood occurs and share this information with local authorities. Alberta Environment should continue to explore and evaluate other methods of collecting flood data such as satellite imagery.
6. AENV make historic flood information available to the public on its web site. Suitable information would include historic high-water elevations, flood risk reports, and flood photography.

Target: Alberta municipalities have the support they need through additional education, guidelines, regulations and programs to encourage appropriate future developments in flood prone areas.

Recommendations:

7. The Minister of Environment designate a flood risk area after the responsible local authority has had an opportunity to review the maps and provide comments on the technical elements. The recommended time period for designation is within six months of receiving the maps.
8. A notification system be established that will inform any potential buyer that the property is located within a designated flood risk area.
9. Alberta Municipal Affairs, in consultation with Alberta Environment prepare an information bulletin on the subject of planning for flood-prone lands to be circulated to municipalities.
10. The flood mitigation strategy include a cessation of the sale of crown lands in known flood risk areas.

11. The “Flood Risk Management Guidelines for Location of New Facilities Funded By Alberta Infrastructure” be followed when province constructs or contributes funding towards new facilities.
12. The provincial government develop programs to cost-share flood mitigation measures to protect existing development in urban and rural areas. The costs should be shared among the federal, provincial, and local governments. In the case of individuals, they could cost-share directly with the federal government.
13. Disaster Recovery Regulations be amended to prohibit disaster recovery payments for new inappropriate development in flood risk areas.
14. The provincial government continue to pursue amendments to the federal disaster financial assistance arrangements to allow federal funding for disaster recovery compensation for damages to appropriate development in flood risk areas.
15. The provincial flood mitigation strategy not include provincially operated or funded flood insurance.
16. The provincial government continue to support local authorities to educate their citizens on the flood risks to their communities.

Target: Alberta government continues to provide technical expertise to municipalities for river related flooding.

Recommendations:

17. AENV expand its forecasting network to provide an appropriate level of warning for all local authorities exposed to a flood risk.
18. AENV and MA work together to explore the potential for extending the provincial flood risk mapping program to an emergency mapping program.

5. Future Plans

After ministerial approval of this draft flood mitigation strategy, the next stage would be to develop an implementation strategy for the recommendations provided and to provide a forum for concerns that could not be addressed in the first stage of the strategy development such as flooding of aboriginal lands.

The implementation of some recommendations requires only a commitment of resources from the provincial government while other recommendations involve the federal and/or municipal governments. For recommendations that can be carried out by the provincial government, initiatives should be coordinated between ministries with clear direction for priority projects. Because of the inter-relationship between recommendations, it will be necessary to define the scope of each project, including when and how the benefit to Albertans will be realized.

The recommendation for a federal cost share program to provide flood mitigation to municipalities will be highly beneficial but will require resources from the provincial government before a program can be initiated. Without a definite response from the federal government, it may be difficult to justify diverting resources from other programs to design a community flood mitigation program that may or may not be federally funded.

Because of the large investment of money, the federal government may wish to participate in structuring the program, making it difficult for Alberta to proceed independent of the federal government. For this reason, it is vital to reach an understanding with the federal government before initiating this important aspect of the flood mitigation strategy.

The flood mitigation strategy recommends that municipalities be involved in everything from flood risk education to identifying flood mitigative measures for their local area. A process must be coordinated between the ministries to develop an effective approach. The municipalities need to be provided education and resources to facilitate their interactions with people within the community and with the provincial government. Since the municipalities are responsible for land use planning decisions, it is vital that municipalities are provided with the knowledge of flood mitigation and are well informed about any new programs or policies

6. Summary

Following the spring floods of 2005, a ministerial task force was struck to create a provincial flood mitigation strategy. Lead by G. Groeneveld (MLA, Highwood), a interdepartmental committee consisting of Alberta Environment, Alberta Transportation and Municipal Affairs prepared a draft flood mitigation strategy. The strategy focused on: (1) making resources available to make informed decisions about flood risks, (2) providing support to municipalities through guidelines, regulations and programs to encourage appropriate future developments in flood prone areas and (3) continuing to provide technical expertise to municipalities for river related flooding. Municipalities with an identified flood risk were shown, through a consultation process, to strongly support all of the recommendations provided for comment. If these recommendations are to be implemented, we recommend a project management team be assembled to create an action plan, finalize budgets, direct legislative reviews and identify additional staffing requirements.

7. References

Hart, D. 2006. Provincial Flood Risk Management Strategy: Consultations with Communities at Risk. Hart Water Management Consulting and AMEC Earth and Environmental. Calgary Alberta.

Kumar, Ashij, Ian Burton, and David Etkin. 2001. Managing flood hazard and risk: report of an independent expert panel. Office of Critical Infrastructure Protection and Emergency Preparedness. Government of Canada.

Shrubsole, Dan, Greg Brooks, Robert Halliday, Emdad Haque, Ashij Kumar, Jacinthe Lacroix, Harun Rasid, Jean Rousselle, and Slobodan P. Simonovic. 2003. An Assessment of Flood Risk Management in Canada. Institute for Catastrophic Loss Reduction (ICLR) Research, Paper Series No. 28.

Flood Mitigation Committee Membership

Name	Department	Date
Minister		
Lyle Oberg, MLA	Infrastructure & Transportation	September 2005-March 2006
Ty Lund, MLA	Infrastructure & Transportation	March 2006-November 2006
Guy Boutilier, MLA	Environment	September 2005-November 2006
Rob Renner, MLA	Municipal Affairs	September 2005-November 2006
Committee Membership from September 2005		
Chair, George Groeneveld	MLA, Highwood	September 2005-November 2006
Jay Nagendran	Environment	September 2005-November 2006
Greg Carter	Municipal Affairs	September 2005-November 2006
Allan Kwan	Infrastructure & Transportation	June 2006 – November 2006
Co-Chair, Chandra Mahabir	Environment	September 2005-November 2006
Members		
Jim Choles	Environment	September 2005-November 2006
Denis McGowan	Environment	September 2005-November 2006
Ray Keller	Environment	April 2006-November 2006
Nancy Hackett	Municipal Affairs	June 2006-November 2006
Adam Armitage-Conway	Municipal Affairs	July 2006-November 2006
Ajit Paramapathy	Infrastructure & Transportation	October 2006-November 2006
Past Members		
Doug Clark, Co-Chair	Infrastructure & Transportation	September 2005-May 2006
Wayne Jackson	Municipal Affairs	September 2005- June 2006
John Taggart	Environment	September 2005-April 2006
Arbind Manili	Infrastructure & Transportation	June 2006 – October 2006
Colleen Walford	Environment	September 2005- December 2005
Herb Presley	Municipal Affairs	June 2006-July 2006

Municipal Consultations

Schedule of Meetings

Date	Location	Communities	Committee Member
April 19	Milk River	Milk River	George Groeneveld, Doug Clark
April 27	Canmore	Canmore Banff Exshaw	Chandra Mahabir
April 28	High River	High River Okotoks Turner Valley Black Diamond	George Groeneveld Chandra Mahabir
May 19	Cochrane	Cochrane Bragg Creek Airdrie	George Groeneveld Jim Choles
May 25	Drumheller	Drumheller Rosebud	George Groeneveld Chandra Mahabir
May 26	Medicine Hat	Medicine Hat	George Groeneveld, Nancy Hackett Saba Gnanakumar (AENV) Rose Hall (AENV)
May 31	Camrose	Camrose Millet	Arbind Manali
June 6	Sundre	Sundre Markerville	George Groeneveld Chandra Mahabir Jim Choles
June 9	Fort MacLeod	Fort MacLeod Lethbridge Pincher Creek Crowsnest Pass Cardston	George Groeneveld Denis McGowan
June 12	Red Deer	Red Deer	George Groeneveld Ray Keller
June 22	Redcliff		Rose Hall (AENV)
June 27	Barrhead	Barrhead Whitecourt Sangudo	George Groeneveld Arbind Manali
June 28	St. Albert	St. Albert Ft. Saskatchewan Lamont Radway	George Groeneveld Nancy Hackett
June 29	Lacombe	Lacombe Alix Stettler	George Groeneveld Jim Choles

Date	Location	Communities	Committee Member
July 5	Fort Vermilion	Fort Vermilion Paddle Prairie Metis Settlement	George Groeneveld, Chandra Mahabir Evan Friesenhan (AENV)
July 7	Drayton Valley	Drayton Valley Birchwood Village Green (Bucklake Creek)	Jim Choles
July 10	Calgary	Calgary Pine Creek	George Groeneveld Chandra Mahabir
July 18	Ponoka	Ponoka	George Groeneveld
July 19	Thorsby	Thorsby	No Committee member present
July 20	Hinton	Hinton	No Committee member present
August 8	Carbon	Carbon	Brian Mallett (AENV)
August 9	Edmonton	Edmonton Rochester	Arbind Manali
August 15	Grande Prairie	Grande Prairie Rycroft	Nancy Hackett
August 17	Slave Lake	Slave Lake Kinuso Marten Beach	Denis McGowan Adam Armitage-Conway
August 21	Vegreville	Vegreville Two Hills	Ray Keller
September 7	Peace River	Peace River High Prairie Watino Manning	George Groeneveld Chandra Mahabir
September 12	Fort McMurray	Fort McMurray	George Groeneveld Chandra Mahabir

DRAFT Flood Mitigation Strategy

Recommendation 1

We recommend that Alberta Environment coordinate the completion of flood risk maps for the identified urban¹ flood risk areas in the province.

It is important to know the areas of the province that are at risk from flooding so the extent of risk can be determined. Accurate mapping that defines the extent of flood risk areas forms the foundation of the Flood Risk Management Action Plan. Once the flood risk area is identified, steps can be taken to protect existing and future development. Failure to act on the information may expose local governments to liability from affected landowners.

Alberta signed a cost-sharing agreement with the federal government to map flood risk areas in the province in 1989. This agreement was terminated before all the identified communities could be mapped. As of 2006, there are 36 communities that require flood risk studies. This recommendation refers to new studies and does not address map maintenance issues. They will be dealt with in Recommendation 2.

Community Response

Ninety-nine out of 100 responses either supported or strongly supported this recommendation. Flood risk mapping was recognized as an essential planning tool. There were questions about terminology and other issues related to flood risk maps indicating a need for ongoing education for local governments. There also several communities and locations that suggested to be added to the list.

Resources Required

Budget Required - \$2.5 million over 5 years.

Lead Department: Alberta Environment

¹ This refers to the 66 communities that were listed in "An Agreement Respecting Flood Damage Reduction and Flood Risk Mapping" signed in 1989 between Alberta and Canada.

Recommendation 2

We recommend that Alberta Environment develop a map maintenance program to ensure that the flood risk maps are updated when appropriate.

Situations may arise where an existing flood risk map no longer adequately represents the flood risk for a location. This may result from changes in the river or immediate area, updating a rural flood risk map or errors in the original study. Flood risk maps should also be reviewed regularly particularly after extreme flood events when public and municipal government interest is high.

Community Response

This is a new recommendation and so the communities did not have an opportunity to comment on it. There were several community comments related to Recommendation 1 that indicated that they saw a need for a map maintenance program.

Resources Required

One full time employee (FTE) and an estimated budget of \$50,000 annually.

Lead Department: Alberta Environment

Recommendation 3

We recommend that Alberta Environment identify priority rural flood risk areas that require flood risk mapping and develop a program to prepare the maps.

It is recognized that rural flood risk mapping is a concern as there is intensive development occurring in rural areas that may be subject to flooding. It is also clear that rural flood-risk mapping cannot be to the same standard as the urban mapping as it would be prohibitively expensive to provide studies for large areas. A rural flood-risk mapping program was envisioned to be one whereby existing information such as aerial flood photos and high-water marks would be used to delineate a map. There would be no division of the flood risk area as occurs in the current flood risk maps. Also, mapping would be based on an historic flood event rather than a theoretical event. Areas identified as requiring flood-risk mapping, but not having any flood information would not be mapped until such information was available. In 2000, about 50 rural areas were identified as requiring flood-risk mapping, but only 25 had any existing information on flooding that could be used. Undoubtedly there would be more areas requesting mapping if the list were to be updated.

Community Response

There was strong support for this recommendation with no significant reservations about the lower level of accuracy.

Resources Required

An FTE position is required to for designing a rural flood risk program. Until the technical aspects of a rural flood risk program are defined, it is difficult to estimate the required resources; however initial estimates suggest that this program could exceed \$1,000,000.

Lead Department: Alberta Environment

Recommendation 4

We recommend that Alberta Environment co-ordinate the determination of the 1:100 year still water lake elevation for all gauged lakes² in the province.

To provide flood information for development around lakes, Alberta Environment will coordinate the calculation of the frequency curves for gauged lakes in the province where appropriate. The 1:100 year lake elevation would apply to the entire lake. Developers would combine this water level with setup and wave calculations to define the risk area around lakes.

Completion of this project will not provide frequency curves for all lakes in the province. Some lakes are ungauged or do not have sufficient data to perform the calculations. There are also lakes that have weirs or other complications that will make the calculations more difficult.

Community Response

Strong support for recommendation with no negative responses. Twenty-five percent of the respondents had no opinion but that probably reflected that it was not an issue for them.

Resources Required

This project was initiated in AENV but, due to lack of resources, has stalled. The cost associated with completing the project is \$500,000 spent over 3 years and 6 months of FTE time.

Lead Department: Alberta Environment

² Gauged lakes refer to lakes that have water level recording gauges present.

Recommendation 5

We recommend that Alberta Environment continue to collect high-water elevation, aerial photography and other appropriate data whenever a significant flood occurs and share this information with local authorities. Alberta Environment should continue to explore and evaluate other methods of collecting flood data such as satellite imagery.

During flood events, Alberta Environment collects high-water marks and aerial flood photography to document the extent of flooding. This information can be used for future flood risk studies and to review existing studies.

Community Response

Unanimous support. Especially in the absence of a flood risk map, this information would be the only data available that a community could use to make a decision on whether to approve development or not.

Resources Required

Alberta Environment collects flood data as part of its mandate and will continue to do so. This information will be made available to local authorities

Lead Department: Alberta Environment

Recommendation 6

We recommend that Alberta Environment make historic flood information available to the public on its web site. Suitable information would include historic high-water elevations, flood risk reports, and flood photography.

Making historic flood information available on a website will also increase the public's confidence in the flood risk mapping as they will be able to review the historic information and reports presented. It will also provide historic flood information for locations outside of mapped flood risk areas.

Community Response

There was strong support (99%) from the respondents with none opposing.

Resources Required

Budget required - \$50,000 and 6 months of FTE time

Lead Department: Alberta Environment

Recommendation 7

We recommend that the Minister of Environment designate a flood risk area after the responsible local authority has had an opportunity to review the maps and provide comments on the technical elements. The recommended time period for designation is within six months of receiving the maps.

Designation is the formal acknowledgement of the flood risk area by the provincial government under Section 96 of the Water Act. It also marks the official start of any policies related to flood management within the flood risk area by the provincial and federal governments. Once an area is designated as a flood risk area, the local government is expected to take the flood risk into account when approving development, zoning or bylaws. The act currently allows the Minister of the Environment to designate a flood risk area after consultation with the municipality. There are currently no regulations in place to govern this section of the act.

Clause (2) (c) of Section 96 mentions that Disaster Financial Assistance may be restricted for flood damages to inappropriate development in a flood risk area constructed after designation.

Community Response

There was strong support for this recommendation (90%) but there were also questions about how the community would be impacted and differing opinions how strong the province's role should be in this.

Resources Required

No additional resources required.

Lead Department: Alberta Environment

Recommendation 8

We recommend that a notification system be established that will inform any potential buyer that the property is located within a designated flood risk area.

There is no requirement for landowners to divulge flood risk during the sale process but information is currently available. Alberta Environment maintains a website that shows provincial flood risk maps and study reports are available. This passive information is not routinely used in the real estate process.

Liens or caveats on the land titles, placed by the province, are not recommended, as this may not stand up in court. This method would also require a legislative amendment to supersede the land titles act.

We recommend that general flood risk information be added to the Alberta Registries site, SPIN II³. This is a website accessed by lawyers, registries, real estate agents and government departments to assess and identify various property hazards prior to purchase. Based on preliminary assessments, it is likely that SPIN II would serve as a link to Flood Risk Information System currently maintained by AENV rather than an independent flood risk information site.

Community Response

Over 80% of the responses from the municipal consultation supported this recommendation. Several communities did not support doing this through a caveat process as this was complex and would require legislative changes.

Resources Required

Estimated cost of \$50,000 to \$100,000 and 6 months of employee time.

Lead Department: Alberta Environment

³ SPIN II is a SPatial INformation system that provides information on land titles and is current used to identify hazards, such as soil contamination, that are associated with land properties.

Recommendation 9

We recommend that Alberta Municipal Affairs, in consultation with Alberta Environment prepare an information bulletin on the subject of planning for flood-prone lands to be circulated to municipalities.

Research and cross ministry discussions are required to determine the key topics for information bulletins. Community consultations indicate that more information on the following topics would be beneficial to their knowledge of flood mitigation: appropriate land use planning in flood prone areas, objectives of flood proofing, and flood event resources.

Once the content of the bulletins is determined, Municipal Affairs would distribute the bulletins. Bulletins related to municipal administration and planning are routinely produced by Municipal Affairs for distribution as part of the Municipal Administrator's handbook. An information bulletin is a tool that provides advice and is not a regulatory tool or a prescriptive guideline.

The bulletin(s) could be distributed through the existing process that includes all municipalities or to selected

Community Response

This recommendation was supported by 98% of participants in the municipal consultation. There is strong agreement that municipalities need additional forms of support to make good planning decisions. An information bulletin is seen as such a support. The only concerns expressed were that municipalities will need to be reminded periodically that the bulletin is available to ensure that it continues to be helpful.

Resources Required

Municipal Affairs is unable to provide estimates of staffing and financial resources at this time.

Lead Department: Alberta Municipal Affairs

Recommendation 10

We recommend that the flood mitigation strategy include a cessation of the sale of crown lands in known flood risk areas.

Selling flood-exposed crown lands abdicates the responsibility to keeping Albertans safe to private landowners, and while the government as the first seller can ensure that the initial purchaser is aware of the risk, there is no certainty that the risk is communicated to future purchasers, renters or lease holders.

Selling lands in flood risk areas is the opposite of flood mitigation. The province loses its say in the use of these lands and any protective measures would need to be taken through cumbersome mechanisms such as legislation or regulations. Undeveloped flood plains are the natural and most effective form of flood mitigation, and this recommendation will protect those areas. Long-term leases of crown land could be considered for appropriate uses such as parks, agri-business and golf courses.

The sale of flood-prone crown lands creates the potential for increased financial liability for the province in terms of Disaster Recovery Program funding that must outweigh the short-term financial benefits of the sale. Any sale, while ensuring the buyers are aware of the risk before purchase could still be seen as condoning development in flood risk areas.

Community Response

The municipalities either cautiously endorsed the selling of crown lands if certain caveats were placed on the sale, or vehemently opposed the sale of crown lands at all.

Resources Required

None, although this would cause a loss of revenue from land sales

Lead Department: Sustainable Resource Development (Public Lands)

Recommendation 11

We recommend that “Flood Risk Management Guidelines for Location of New Facilities Funded By Alberta Infrastructure” to be followed when province constructs or contributes funding towards new facilities.

The guidelines mentioned above have been developed for selecting sites for buildings funded in whole or part by Alberta Infrastructure and Transportation. The guidelines also apply in the consideration of leasing complete or partial non-owned facilities. The guidelines are not standards or rigid requirements as it is extremely difficult to set specific criteria for site selection.

Community Response

The concept was supported by 84% of participants. Primary concerns were that the municipalities do not know how much higher the 1:500 year and the 1:1000 year flood levels will be and the additional costs to the municipalities that this would involve.

Resources Required

Continue to follow existing guidelines. No additional resources are required.

Lead Department: Alberta Infrastructure and Transportation

Recommendation 12

We recommend that the provincial government develop programs to cost-share flood mitigation measures to protect existing development in urban and rural areas. The costs should be shared among the federal, provincial, and local governments. In the case of individuals, they could cost-share directly with the federal government.

Rather than continue to pay damages after reoccurring flood events, a program is needed to encourage flood mitigation. Following the devastating Red River Flood in 1997, the federal government and the government of Manitoba initiated a provincial flood mitigation program to reduce future damages. Following the flood events of 2005, a similar flood mitigation program in Alberta could benefit all levels of government and Albertans. Reduced risk would benefit Albertans and reduced economic losses would be beneficially to the governments, particularly the federal government who pays up to 90% of Disaster Assistance claims for large flood events.

Flood mitigation options for existing structures may include activities such as land purchase, dykes, and retro flood proofing of buildings.

Community Response

79% supported the recommendation for the development of a flood mitigation program. Some municipalities were not comfortable with the cost-share concept and felt that little or no contribution should be required from the municipality.

Resources Required

After consultation with at risk municipalities, it is believed that the provincial cost of flood mitigation could exceed \$300 million. 54 municipalities reported the need for flood mitigation. For many municipalities, the cost of flood mitigation was under \$2 million per municipality. It is estimated that 42 municipalities could be protected for \$32 million. For the other 12 municipalities participating in the consultation process, flood mitigation costs are substantial but may have a higher cost/benefit ratio.

It may be beneficial to study the relevant federal programmes that can be accessed or applied for to gain the monetary resources required to undertake a flood mitigation program to protect existing development.

Additional FTEs would be needed to develop and manage the program in all three ministries.

Lead Department: A project management team is required to develop a program and it is anticipated that AENV, MA and INFTRA would participate.

Recommendation 13

We recommend that the Disaster Recovery Regulations be amended to prohibit disaster recovery payments for new inappropriate development in flood risk areas.

Developments in flood risk areas constitute recurring financial liabilities for the province. Developments in flood risk areas also pose public safety risks, and should be discouraged. “An Agreement Respecting Flood Damage Reduction (DRP) and Flood Risk Mapping in Alberta” signed by Alberta and the federal government in 1989 included provisions for structuring disaster recovery compensation so that inappropriate development constructed within the flood risk area after designation would not be eligible for assistance. Any existing development in a municipality before the designation date would be grandfathered into the agreement; thereby allowing the existing development to continue to be eligible for disaster recovery compensation.

Community Response

There was a high level of support (89%) for this recommendation but there were a lot of questions concerning implementation on definitions and interaction with other recommendations.

Small municipalities support this as it limits their liability and increases their ability to refuse development permits. Often the pressures brought on small municipalities are very high to allow inappropriate development, and implementing this recommendation would allow small communities to shift the responsibility for halting development to the provincial government and avoid political repercussions on themselves.

Large municipalities with significant amounts of riverside development oppose this as it halts development in very high value areas. This development however is not safe, and the financial consequences will be borne by the provincial DRP.

Resources Required

Staff time is required to clearly document and communicate the details of this amendment to municipalities. A process would be required to document which new developments will be covered and which will not. This would include a consolidation of up-to-date municipal maps and development permits currently under review. An additional FTE may be required for this supporting work.

Lead Department: Alberta Municipal Affairs

Recommendation 14

We recommend that the provincial government continue to pursue amendments to the federal disaster financial assistance arrangements to allow federal funding for disaster recovery compensation for damages to appropriate development in flood risk areas.

Disaster Financial Assistance from the federal government and Disaster Recovery Program funding from the province would encourage appropriate safe development over unsafe inappropriate development.

This assistance to appropriate development would be consistent with current rules for compensation for businesses and commercial operations. This funding is consistently quite low and exists primarily for owner-operated businesses.

Community Response

Those comments that supported this recommendation also frequently suggested setting a maximum allowable claim that would reflect the high potential for future flooding. There were suggestions that a flat rate be used for compensation regardless of actual use (ie: agricultural land could be compensated at the same rate as parkland or golf course).

Resources Required

No additional resources required

Lead Department: Alberta Municipal Affairs (Emergency Management Alberta)

Recommendation 15

We recommend that the provincial flood mitigation strategy not include provincially operated or funded flood insurance.

The existing Disaster Recovery Program (DRP) provides sufficient emergency funding to overland flooding. An American-style government insurance program would be a cumbersome, expensive and inefficient duplication of this program. Private flood insurance does exist for sewer-backup or sump-pit flooding. Provincially operated flood insurance would not increase safety of Albertans, increase recovery payments to flood-affected areas, decrease or mitigate flood effects or save money for the Province of Alberta.

Community Response

This is supported by comments from municipalities. 20% of municipalities did not support this recommendation, but their concerns about flood compensation are addressed by the existing DRP system, and reinforce that our DRP must be fair and provide reasonable compensation.

Resources Required

No additional resources required.

Lead Department: Alberta Municipal Affairs (Emergency Management Alberta to continue to lead the Disaster Recovery Program process).

Recommendation 16

We recommend that the provincial government continue to support local authorities to educate their citizens on the flood risks to their communities.

Education is a key element of a flood mitigation program and is provided by the government through websites and interaction with staff. Alberta Environment and Municipal Affairs play various roles in flood risk education.

Alberta Environment routinely provides support and education on the provincial flood risk program and river monitoring/forecasting programs. Education consists of website information, public meetings, municipal information sessions, and ongoing support for technical questions.

Municipal Affairs provides education on flood risks as part of the work of District Officers. Additional education occurs through special events such as Emergency Preparedness Week.

Community Response

Education as a flood mitigation strategy was strongly supported (99% support). Comments recommended improving both passive (website, web links) and direct (funding for local government education, education material for elected officials) educational activities.

Resources Required

Additional staff with technical knowledge need to be available to develop and deliver additional educational material. Recommend a minimum of 2 FTEs (one in AENV and one in MA).

Lead Department: Alberta Environment, Alberta Municipal Affairs

Recommendation 17

We recommend that Alberta Environment expand its forecasting network to provide an appropriate level of warning for all local authorities exposed to a flood risk.

Effective, consistent flood warning coverage should be provided throughout the province. As of 2006, 30 of 66 communities with an identified flood risk do not have flood forecasting warning procedures. Verbal communication with the local authority is the primary means of communication.

The provincial river ice program is focused on providing services for Fort McMurray and Peace River, although several other areas of the province experience river ice related problems. Additional resources are required to effectively monitor and communicate river ice related risks.

Community Response

This is supported by comments from municipalities, as it was 94% endorsed. Their concerns about forecasting were that all citizens should have the same level of service while being cost effective. Recommendation should include enhancements to existing warning and procedures, including flood proofing of existing infrastructure. The existing forecasting and forecasting network are seen as very valuable to municipalities.

Resources Required

- It was estimated that \$3 million over five years is required to improve the forecasting data collection network. This does not provide resources for operation and maintenance of an enhanced network. An expanded network is expected to add an additional cost of approximately \$400,000 annually to service contracts to operate the new installations.
- Alberta Environment estimates that another 8 FTEs would be needed to provide increased flood coverage. This results in an additional \$1.5 million annually to provide operating budgets for the expanded monitoring and forecasting capabilities

Lead Department: Alberta Environment

Recommendation 18

Alberta Environment and Municipal Affairs work together to explore the potential for extending the provincial flood risk mapping program to an emergency mapping program.

The current flood risk identification program was designed to be a municipal planning tool. During the floods of 2005, many municipalities and government departments relied on this maps for emergency response. Although flood emergency mapping is a natural extension to the current flood risk mapping program, additional information can be added to the base knowledge contained in the planning tool to greatly increase the applicability for emergency response. For example, information on vital and lifeline structures (schools, hospitals, etc.) that may be impacted during events greater than the municipal planning event (generally 1:100 year return frequency) should be readily available during a flood event.

Community Response

This is a new recommendation. It is anticipated that municipalities would strongly support this extension to the existing flood risk planning program.

Resources Required

A pilot program would require participation from River Engineering (AENV), River Forecasting (AENV) and Emergency Management Alberta (MA) to determine the elements of an emergency map. One FTE for River Engineering would be required to support this pilot program. The required funding is dependant on the size of the municipality and model method applied within the flood risk study. For example, costs for emergency mapping for Calgary could exceed \$200,000 but may be less than \$20,000 for Didsbury.

Lead Department: Alberta Municipal Affairs